

ABSTRACT OF THE DISCLOSURE

Provided is a method of controlling an alignment direction of CNTs in manufacturing a carbon nanotube semiconductor device using the CNTs for a channel region formed between a source electrode and a drain electrode. In manufacturing a carbon nanotube semiconductor device including a gate electrode, a gate insulating film, a source electrode, a drain electrode, a CNT layer formed between the source electrode and the drain electrode in contact therewith, the method conducts: dropping a CNT solution obtained by dispersing CNTs in a solvent onto a region between the source electrode and the drain electrode while an alternating current voltage is applied between the source electrode and the drain electrode; and removing the solvent to control an orientation of the CNTs in the CNT layer.